Foil chaff experiment during WAVE 2004 campaign

Yoshiko Koizumi[1]; Yasuhiro Murayama[2]; Takumi Abe[3]; Koh-ichiro Oyama[4]

[1] Earth and Planetary Sci., Univ. of Tokyo; [2] NICT; [3] JAXA/ISAS; [4] ISAS

Foil chaff experiment using a sounding rocket S-310-33 was carried out during WAVE 2004 campaign. This campaign was to study the formation process of the waves in the airglow structures. S-310-33 was launched at 0:30JST on the 18th January 2004, from Uchinoura, Japan. About 20,000 foils were successfully ejected at the altitude of about 104 km during the descent of the rocket, which was 277 seconds after launch. The foil chaff were tracked by a primary radar for about 13 minutes, and then the velocity and direction of the neutral wind were obtained in the height range of 96-85km. The results indicate a very strong northward wind above 88 km and an eastward wind below. We will compare the results with simultaneous wind observations by ground-based radars. In this experiment, we recorded the intensity of the return signal versus radar range on video. From the analysis of the video record, improvement on wind measurement and detection of small-scale perturbations are expected.